

### **REMARKS**

The present response is intended to be fully responsive to the rejection raised in the Office action, and is believed to place the application in condition for allowance. Further, the Applicant does not acquiesce to any portion of the Office Action not particularly addressed. Favorable reconsideration and allowance of the application is respectfully requested.

In the Office action, the Office noted that claims 1-16 are pending and rejected. Applicant amends claims 3 and 4. Applicant has not introduced any new matter by way of the foregoing amendments.

In view of the above amendments and the following discussion, the Applicant submits that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Thus, Applicant believes that all of these claims are now in condition for allowance.

### **OBJECTION**

The Office objected to claims 3 and 4 for being improper in form due to a multiple dependency. Applicant amends claims 3 and 4 to remedy the multi dependency, thus, providing proper antecedent basis. Therefore, Applicant requests reconsideration and withdrawal of the objection to claims 3 and 4.

### **REJECTION**

The Office rejected claims 1-8 and 13-14 under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent Application No. 4,322,577 issued to Brandstorm et al. (hereon after "Brandstorm"). In addition, the Office rejected claims 9-12 and 15-16 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2003/0028484 published to Boylan et al. (hereon after "Boylan") in view of U.S. Patent Publication No. 2003/0016823 published to Chung et al. (hereon after "Chung"). The Applicant respectfully traverses the rejections.

**A. Applicant's Response to the 35 U.S.C. § 102(b) Rejection of claims 1-8 and 13-14**

The Office rejected claims 1-8 and 13-14 under 35 U.S.C. § 102(b) as being unpatentable over *Brandstorm*. The Applicant traverses the rejection.

As the Examiner is aware, "anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinen Fabrick GmbH v. American Hoist Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984) [emphasis added]. Applicant submits that the cited reference is devoid from disclosing at least one element recited in Applicant recited invention.

Claim 1 recites a combination of elements directed to a method of encryption. The combination of elements includes partitioning an input message into matrix elements; computing a determinant of said matrix; encrypting said determinant; and multiplying said matrix by said encrypted determinant. [Emphasis Added].

In the Office Action, the Office insinuated that *Brandstorm* discloses all the elements recited in claims. In support of the rejection, the Office indicated that *Brandstorm* discloses "computing a determinant of said matrix" in col. 6, lines 4-10 and lines 55-63 and "encrypting said determinant" in col. 7, lines 16-30. *Office Action*, at page 3. Applicant respectfully disagrees.

*Brandstorm*, on the other hand, discloses an encryption and decryption method and apparatus, in which a plaintext message blocks and subblocks "are interpreted as elements of Galois-field [and a] plaintext matrix (M) of said elements is multiplied by a first key matrix (A) of a group of Galois-field, the resulting product (M.A) being multiplied by a second key matrix (B) of the same group over said Galois-field." *Brandstorm*, at Abstract. *Brandstorm* discloses "a plaintext message applied as blocks m consisting of, for example, data bts to a matrix encoder 1. The output of the encoder delivers a matrix M for each block m. The elements in the matrix M belong to a Galois-field... These matrices are supplied to a matrix multiplier 42... also the matrix encoder 42 may be a part of a common matrix encoder 40, 41" *Id.* at col. 6 lines 4-63.

Therefore, unlike claim 1, *Brandstorm* is devoid from disclosing "computing a determinant of said matrix; encrypting said determinant." Thus, Applicant submits that *Brandstorm* does not teach all the elements recited in claim 1. Claim 13 recites similar features as those recited in claim 1. The Applicant submits that *Brandstorm*

does not anticipate claim 13. Hence, claims 1 and 13, in view of *Brandstorm*, satisfy the requirements of 35 U.S.C. § 102(b) and is in condition for allowance.

Claims 2-8 and 14 depend, directly or indirectly, from claims 1 and 13, respectively, and, thus, necessarily contain each and every element recited in their respective independent claim. Since the Applicant submits that *Brandstorm* does not anticipate claims 1 and 13, the Applicant further submits that *Brandstorm* also does not anticipate claims 2-8 and 14. Hence, claims 1-8 and 13-14 satisfy the requirements of 35 U.S.C. § 102(b) and are in condition for allowance.

**B. Applicant's Response to the 35 U.S.C. § 103(a) Rejection of claims 9-12 and 15-16**

The Office rejected claims 9-12 and 15-16 under 35 U.S.C. § 103(a) as being unpatentable over *Boylan* in view of *Chung*.

As the Examiner is aware, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claimed limitations. The teaching or suggestions to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F. 2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Furthermore, as the Office is also aware, the courts have repeatedly stated that a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983).

*Boylan* discloses "a method for inter-terminal payment and corresponding devices and computer programs loadable into said devices [wherein] the method comprises a transfer of financial value from a payment device of a payer (PDPr) to a payment device of payee (PDPe) with the assistance and the supervision of a trusted third party (TTP) by a message. *Boylan*, at Abstract. *Chung*, on the other hand, "techniques over the conventional random number generators and

radomizatiom procedures [that uses] irrational numbers over pseudo-random numbers generated by LFSR...." *Chung*, at Abstract.

Accordingly, it is Applicant's opinion that *Boylan* teaches away from the teaching of *Chung*. *Boylan* and *Chung*, alone and in combination, do not suggest or show a motivation for modifying the reference or to combine the reference teachings. In addition, it is Applicant's opinion that there is no evidence in any of the prior art that shows a "reasonable expectation of success" in combining the references. Thus, it is Applicant's belief that a *prima facie* case of obviousness has not been provided. The Applicant submits that *Boylan* and *Chung*, alone and in combination, do not disclose all the elements or render claim 9 and 13 obvious

Given that each of the dependent claims 10-12 and 15-16 depend, directly or indirectly, from independent claims 9 and 13, respectively, each necessarily includes all the elements of its respective independent claim. Since Applicant submits that *Boylan* and *Chung*, alone and in combination, do not disclose all the elements or render claims 9 and 13 obvious, the Applicant further submits that *Boylan* and *Chung*, alone and in combination, also do not disclose all the elements or render claims 10-12 and 15-16 obvious. The Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 9-12 and 15-16.

**CONCLUSION**

In view of the foregoing, the Applicants submit that none of the claims presently in the application are anticipates under 35 U.S.C. §102 or obvious under the provisions of 35 U.S.C. §103. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Office believes that any unresolved issues still exist or if, in the opinion of the Office, a telephone conference would expedite passing the present application to issue, the Office is invited to call the undersigned attorney directly at 972-917-4365 or the office of the undersigned attorney at 972-917-4363 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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